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MEMORANDUM

ON

CLOSURE OF AND EXCLUSION FROM SCHOOL.

LONDON:
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By DARLING & SON, Ltd., 34-40, Bacon Street, E.

And to be purchased, either directly or through any Bookseller, from
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CONTENTS.

MEMORANDUM to Medical Officers of Health and School Medical Officers upon Public Health Administration for the Prevention of the Spread of Infectious Diseases occurring among Children attending Public Elementary Schools, with special reference to the circumstances in which the Closure of Schools, or the Exclusion of Individual Scholars, may be necessary.

This Memorandum is a revised and enlarged edition of the "Memorandum on the Circumstances under which the Closing of Public Elementary Schools or the Exclusion therefrom of particular Children may be required in order to prevent the spread of Disease," which was last issued by the Local Government Board in January 1908. The circumstances which have occasioned the revision of the Memorandum and the addition of much new matter are referred to below, and it has been considered desirable that the revised Memorandum, in the preparation of which the Chief Medical Officer of the Board of Education has co-operated, should now be issued.

September, 1909.

PART I.—INTRODUCTORY AND GENERAL.

1. School hygiene has been placed upon an altered footing by Section 13 of the Education (Administrative Provisions) Act, 1907; and the introduction of the School Medical Officer into the local administrative machinery of preventive medicine has been accompanied in the Code of Regulations for Public Elementary Schools (1909) by new or modified provisions as to medical inspection, and as to the closure of schools and the exclusion of individual scholars with a view to the prevention of the spread of disease.

As will be seen from a consideration of this Memorandum, the recent changes have materially increased the possibilities of effective action against disease possessed by local authorities and their medical officers.

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Code Requirements for School Closure and for the Exclusion of Individual Scholars.

School Closure.

2. The Code for 1909 contemplates that in certain particulars new administrative conditions shall be satisfied before the Board of Education will allow a claim for grant in respect of schools which, owing to closure with a view to preventing the spread of disease, have not been open the requisite number of times.

This closure may be compelled by the Sanitary Authority under Article 57 of the Code, or may be voluntary on the part of the Local Education Authority. Article 57 is as follows :—

> *Article* 57. If the Sanitary Authority of the district in which the school is situated, or any two members thereof, acting on the advice of the Medical Officer of Health, require either the closure of the school or any department thereof, or the exclusion of certain children for a specified time, with a view to preventing the spread of disease or any danger to health likely to arise from the condition of the school, such requirement must at once be complied with.

As regards the Grant, provision is made by Article 45 (*b*) where a school is compulsorily closed or is closed under the advice or with the approval of the School Medical Officer, or for any other unavoidable cause. It runs as follows :—

> *Article* 45 (*b*). If the requisite number of meetings has not been held owing to a closure of the school under Article 57, or under the advice or with the approval of the School Medical Officer, or for any other unavoidable cause, the grant will be paid in full, provided that the requirements of this Article are satisfied after an allowance of nine meetings has been made for each week of such closure.

Exclusion of Children.

If the Sanitary Authority or two members thereof, acting on the advice of the Medical Officer of Health, require the exclusion of certain children for a specified time in order to prevent the spread of disease those children must be excluded (Article 57). Thus the Medical Officer of Health can initiate a compulsory process whether for closing the school or for excluding scholars, though he can only do so through the Sanitary Authority or two members thereof.

The exclusion of children is also provided for on the authorisation of the School Medical Officer by Article 53 (*b*) of the Code, which is as follows :—

> *Article* 53 (*b*). Where the Board (of Education) are satisfied (i) that proper arrangements have been made by the Local Education Authority for enabling the School Medical Officer to ascertain and certify cases in which the exclusion of children from school is desirable, and (ii) that the School Medical Officer has authorised the exclusion of certain children from the school
>
> (1) on the ground that their exclusion is desirable to prevent the spread of disease, or

(2) on the ground that their uncleanly or verminous condition is detrimental to the other scholars, or

(3) on the ground that, owing to their state of health or their physical or mental defects, they are incapable of receiving proper benefit from the instruction in the school,

the exclusion of such children shall be deemed for the purposes of this Code to be exclusion on reasonable grounds.

For the purposes of this provision the Local Education Authority may direct that no children who have been excluded under the authority of the School Medical Officer or under Article 57 or who have been absent from School owing to sickness, shall be re-admitted to school if the School Medical Officer is not satisfied that they can attend school without risk to themselves or others.

Every direction or authority given by the School Medical Officer must be embodied in a certificate signed by him. A copy of every certificate must be furnished to the Local Education Authority and must be produced, if required, to any Inspector or Officer of the Board's Medical Department.*

3. The general effect of the changes which these Articles of the Code bring about may be stated as follows :—

(*a*) Henceforth there is no appeal against requirements of the Sanitary Authority made in accordance with the terms of Article 57.

(*b*) Under previous Codes the requirements of the Article corresponding to Article 45 (*b*) have been satisfied when a school has been closed voluntarily "under medical authority" including the advice or approval of any medical practitioner. Under the present Code where closure for medical reasons has been effected voluntarily, the requirements of Article 45 (*b*) will not be satisfied unless the School Medical Officer recognised by the Board of Education has advised or, where he has not advised, approves the closure.

(*c*) In practice it is customary for the Medical Officer of Health, without resorting to the formal procedure of Article 57, to arrange, as soon as an infectious case is notified to him, for the temporary exclusion from school of the infected child and of any children who have been in contact with the infectious case, or of any children suspected of being themselves infectious. If such exclusions are to be deemed to be on "reasonable grounds" they must, in accordance with Article 53 (*b*), be endorsed at the time or subsequently by the School Medical Officer. In previous Codes exclusion on any medical authority has been regarded as "reasonable ground" for exclusion. The new conditions indicate the desirability of a working arrangement between the

* For the purposes of the Code "School Medical Officer" means a medical officer named by the Local Education Authority, and recognised as such by the Board of Education. In exceptional cases the Board of Education will recognise separate School Medical Officers for separate parts of one area.

Medical Officer of Health and the School Medical Officer, when they are not the same officer, in order that the former may not need to adopt the procedure provided in Article 57, for the formal and compulsory exclusion of individual scholars.

Co-ordination of Work of Medical Officer of Health and of the School Medical Officer and other School Officers.

4. It is the desire alike of the Local Government Board and of the Board of Education that the relations of the local Sanitary Authority and of the Local Education Authority, should in all respects be intimate and cordial, in order that the administrative procedures of both bodies may be reciprocally beneficial. It is only by such mutual co-operation that the best interests of each district can be secured to the fullest extent.

5. It must, however, be borne in mind that the Medical Officer of Health, acting under the Sanitary Authority, is responsible for dealing with outbreaks of infectious disease, including such outbreaks in schools ; and the action of the School Medical Officer, where he is not also Medical Officer of Health, must be consistent with this general consideration. The importance of this consideration is indicated by the fact that the statutory powers as to isolation of patients and the cleansing and disinfection of houses are possessed by Sanitary Authorities alone. The new requirements of the Code in no way diminish the responsibility of the Medical Officer of Health for taking all such steps as are demanded in the public interest to prevent the spread of infection. As a matter of administrative educational procedure the certificate of the School Medical Officer is required under Article 53 (*b*) for cases of exclusion. and for voluntary closure of a school for infectious disease under Article 45 (*b*) ; but the Medical Officer of Health must be in a position to act promptly in each instance, more particularly in regard to exclusion. Cases may frequently occur where prompt action is essential, and where valuable time would be lost by reference either to the Sanitary Authority, with a view to the issue of requisitions under Article 57, or to the School Medical Officer ; and it is eminently desirable that in these cases, more especially as regards the exclusion of individual scholars, the Medical Officer of Health should be in a position to take immediate action.

6. This end can best be secured, in cases where the Medical Officer of Health is not himself the School Medical Officer, by the establishment of definite working arrangements between these two officers under which, on the one hand, Local Education Authorities will authorise Managers and Teachers to act, as in the past, on the recommendations of the Medical Officer of Health, and, on the other hand, the Sanitary Authorities will arrange that the Medical Officer of Health embodies his recommendations in certificates which are transmitted to the School Medical Officer with a view to the formal authorisation required by Article 53 (*b*) of the Code

in cases of exclusion, and to the approval required by Article 45 (*b*) in cases of closure. Where such working arrangements are adopted, it should seldom be necessary under the new conditions for the Medical Officer of Health to advise the Sanitary Authority, or two Members thereof, to put into force the powers conferred upon them by Article 57 of the Code.

7. The conditions under which mutual co-operation between officers of the local Sanitary Authority and of the Local Education Authority can be made most effective will vary according to local organisation. When in autonomous areas the Medical Officer of Health and the School Medical Officer are the same officer, direct unity of action is at once obtained. In all other cases waste of effort and some duplication of work can only be avoided by agreement between the two officers and their authorities on general lines of action, both as to the details of medical administration, and as to the regulations for teachers and other school officers mentioned in paragraph 9.

In county areas, where the County Medical Officer of Health is also the School Medical Officer, he is in a position to organise the needed co-operation. Where, however, these offices are held by different persons, or where there is no County Medical Officer of Health, it is obviously desirable that definite arrangements should be made between the Local Education Authority and the local Sanitary Authorities providing for the harmonious co-operation of their respective officers. When Assistant School Medical Officers are not themselves the District Medical Officers of Health, the need for frequent interchange of information between the officers of the Sanitary and Education Authorities will arise; and lines of action in regard to closure of schools and the exclusion of individual scholars will need to be settled with due reference to the particular circumstances of the area, and to the regulations adopted by the Local Education Authority for the organisation of the School Medical Service.

8. In order that the requirements of Article 53 (*b*) of the Code may be met, it is necessary that all cases of exclusion from school by the direction of the Medical Officer of Health should be promptly reported by that officer to the School Medical Officer. As a rule closure of the school should only be arranged in consultation with the School Medical Officer. This rule should be followed, save in serious emergency; and when immediate closure is necessary in the interests of public health, the Medical Officer of Health should at once communicate with the School Medical Officer.

9. Efficiency in the prevention of the spread of infection implies active co-operation not only between the Medical Officer of Health and the School Medical Officer, but also between these officers and the school teachers, school nurses, and attendance officers. This general need can be met by each Local Education Authority making regulations as to the duties of each of their officers to send forthwith to the Medical Officer of Health and to the School Medical Officer, information regarding any children suspected to be suffering from infectious illness, and to exclude such children

temporarily. This point is emphasised in the following recommendation quoted from Circular 596 issued by the Board of Education on 19th of August, 1908 :—

> He (the School Medical Officer) must so organise his machinery that both he and the Sanitary Authority shall receive immediate information of any such occurrence (of infectious disease) whether the disease is notifiable or not, by duplicate notices or otherwise, so that the matter may be dealt with effectively and without confusion at the earliest possible moment. Definite regulations should be made for this purpose.

It is expected that such regulations defining the circumstances in which teachers and other school officers should notify suspected cases of infectious disease to the Medical Officer of Health and to the School Medical Officer will be made generally by Local Education Authorities.

PART II.—PRINCIPLES OF ACTION.

Information as to Notifiable Diseases.

10. Success in the control of infection depends on the completeness and promptitude with which each case of infectious disease is recognised, and the completeness and promptitude of the action taken on this information. In this and the following eight paragraphs the means of obtaining such complete and prompt information are considered. All known cases of the diseases coming within the scope of the Infectious Disease (Notification) Acts or of Section 55 of the Public Health (London) Act are notified to the Medical Officer of Health. Scarlet fever and diphtheria are the most common diseases affecting school children which are thus notifiable. Measles and whooping-cough, which are even more prevalent among school children, do not in the majority of sanitary districts come within the scope of the Notification Acts, though they can be added by resolution of the Sanitary Authority subject to the approval of the Local Government Board.

Investigation of "Missed Cases."

11. In the administrative control of such notifiable diseases, therefore, action must start with the Medical Officer of Health. In a well-organised and efficiently worked sanitary district each notification by a medical practitioner of a case of one of the notifiable diseases should form the starting point for a prompt and full investigation of the possibilities of infection. As stated in Article 18 (2) of the Local Government Board's Regulations as to Medical Officers of Health, it is the duty of the Medical Officer of Health "to enquire into and ascertain by such means as are at his disposal the causes, origin and distribution of diseases within his district"; and with this object in view he will regard each case of notified disease as possibly connected with other cases of the same disease, which owing to their mildness, or the absence of some of the characteristic symptoms, have been overlooked by the parent, or the teacher, or both. The investigation of such missed cases is indispensable to effective administration. A portion of this investigation may need to be undertaken at the patient's home; it is incomplete unless an equally thorough inquiry has been made into the condition of the children who have been in contact at school with the scholar who has fallen ill. This inquiry should be shared by the Medical Officer of Health and the School Medical Officer, if these offices are not held by the same official. It should include the recent history and present condition of children who have recently returned to school after an interval of absence, and be followed by careful watching of the children who have been in contact with the infectious case.

Instructions to Teachers and Parents.

12. It is in connection with these investigations that the co-operation of teachers and parents is needed, as well as of the School Medical Officer whenever the latter can help in this work. Infection is often spread in school by the attendance of children suffering from initial and unrecognised symptoms, or attending school in the convalescent stage, or throughout the course of a mild attack

of an infectious disease. To minimise the danger, the teacher should be instructed in the symptoms of onset of the chief infectious diseases, and the symptoms which may be manifested by children who have recently passed through the acute stages of these diseases. Clear directions should be given by Local Education Authorities instructing teachers temporarily to exclude children showing any symptom suggestive of any of these diseases, until medical assurance can be had that they may attend school without harm to themselves or danger to other scholars. Instructions of this kind will naturally find a place in the arrangements required by Article 53 (b) of the Code for enabling the School Medical Officer to ascertain and certify cases in which exclusion is desirable. During the prevalence of any particular infectious disease the attention of the teacher may be drawn, by circular letter or otherwise, to the most obvious symptoms indicating the possibility that a scholar is sickening for, or is suffering or recovering from, this disease.

Intimations by School Officers to Medical Officer of Health and School Medical Officer.

13. Under regulations framed as suggested in paragraph 9, or apart from such regulations, the school teacher and school attendance officer should inform both the Medical Officer of Health and the School Medical Officer of any children who have recently been kept at home with illness of a suspicious character, or concerning whom circumstances suggest the possibility of infection. This information probably will have come to the teacher and to the attendance officers from direct communication with parents. In some instances the attendance officers and in others the teachers may obtain the earliest information; and the system of intimations to the medical officers should be so arranged as to secure the simultaneous conveyance to the Medical Officer of Health and to the School Medical Officer of such information. No harm can come from duplication of such notifications, and the Local Education Authority can by careful organisation devise arrangements which shall be prompt and effective and at the same time easy in application.

14. Opportunity should be taken by circular letters or otherwise to impress upon parents their responsibility in preventing the spread of infection in schools, especially when any special disease threatens to become prevalent. The particular attention of parents should be drawn to the fact that a "bad cold" or an "ulcerated throat" or a "spring rash" may, in fact, indicate a mild attack of diphtheria or scarlet fever, and that to send children to school either so suffering or when convalescing from such conditions, without having first obtained a medical opinion, may involve serious consequences to other children.

Occasional Diagnosis by Medical Officer of Health.

15. The difficulty occasionally arises that the parents of a child who is suspected to be suffering from a mild attack of an infectious disease cannot afford to send, or will not send, for a doctor, although they have kept the child away from school for a few days. Exclusion from school must be continued in these, as in all cases of

suspicion, until doubt as to the nature of the case has been removed; and meanwhile the parent must be pressed to utilise the private or public agencies available for medical diagnosis according to circumstances. In such cases if delay and consequent danger of spread of infection are to be avoided, the Medical Officer of Health or the School Medical Officer or some other medical man temporarily or permanently acting for the Sanitary Authority, should make or aid in making a diagnosis. This corresponds to the general practice in investigating outbreaks of small-pox; and its more frequent adoption for other infectious diseases would enable local authorities to make better use of their isolation hospitals and other official machinery for preventing the spread of disease.

Intimations by Medical Officer of Health to School Medical Officer and Head Teacher.

16. The information as to notifiable infectious cases among school children obtained by the Medical Officer of Health should be promptly transmitted to the School Medical Officer and to the Head Teacher of the school concerned, in order that the necessary instructions as to exclusion from school, &c. may be given. In the Metropolis, under Section 55 (4) of the Public Health (London) Act, 1891, it is compulsory on the Medical Officer of Health to send a copy of each notification certificate within twelve hours after its receipt to the Head Teacher of the school attended by the patient (if a child), or by any child who is an inmate of the same house as the patient. In sanitary districts outside the Metropolis similar intimations should be sent promptly both to the School Medical Officer and to the Head Teacher. The notice thus sent to the teacher may also usefully comprise general information on the symptoms of infectious diseases.

Information as to the Non-notifiable Diseases.

17. Measles, whooping-cough, mumps, chicken-pox and infectious diseases other than scarlet fever and diphtheria, which prevail among school children are seldom added by Sanitary Authorities to the schedule of compulsorily notifiable diseases. Even in districts in which any of these diseases are notifiable, the parents commonly either do not consult a doctor, or they call him in after secondary infection of other children has already occurred. Hence the Medical Officer of Health is dependent for information on the School Medical Officer and on parents, teachers, and attendance officers; and if the rapid spread of these diseases in school and the need for exclusion from school on a large scale or for school closure are to be avoided, school officers and parents should furnish this information to the Medical Officer of Health. Prompt and complete notification to the Medical Officer of Health and to the School Medical Officer of such "minor" cases of infectious disease is difficult to ensure; but the appropriate action of Local Education Authorities on the recommendation contained in paragraph 7 (c) of the Board of Education Circular 596, dated 17th August, 1908, will, it is hoped, go far towards securing this end. (*See* paragraph 9 *ante*.)

Intimations as to Cases of Doubtful Nature.

18. Apart from systematic and prompt intimation to the medical officers by teachers and attendance officers of all cases of the non-notifiable infectious diseases ascertained by them, further intimations should be sent by them of the absence from school of any child on the suspicion that it is suffering from an infectious disease; and absence of several children of one family from school at the same time, no matter what name be given to the complaint that keeps them at home, should also be reported. In practice it has been found that such intimation of absentees has materially aided the Medical Officer of Health in taking measures for the suppression of infectious disease.

19. The medical inspections carried out under the Education (Administrative Provisions) Act of 1907 will in due course enable the medical history of each scholar in respect of infectious diseases to be recorded; and the knowledge thus secured will in the future be valuable in determining whether in particular cases children need to be excluded from school or classes need to be closed when an outbreak of infectious disease occurs. It is anticipated that this information will be valuable especially in dealing with outbreaks of measles.

It is possible that in the light of these records and of further work under the new statutory and administrative conditions, some modification of the rules for exclusion and closure given in paragraphs 37 to 54 may be indicated.

General Considerations as to the Action to be taken in respect of Infectious Diseases occurring among School Children.

20. There is little doubt that infection in schools is spread to a much greater extent by infectious persons than by infected things; and that by systematically obtaining the information as to the infectious cases indicated in paragraphs 10 to 19, and by adopting the measures of exclusion of patients and of recent "contacts" with them which are described in paragraphs 37 to 55 the common sources of infection can be controlled.

21. Subject to this chief consideration, certain other administrative lines of action may be here indicated. Disinfection of special class rooms or of particular articles should be undertaken when there is reason to believe that these have been infected. A special caution may be given as to the risk arising from moistening slates with saliva, or from the use in common of penholders and pencils which are apt to be put in the mouth; and steps should be taken to avoid this.

22. The frequent and thorough washing of class-rooms and cloak-rooms is an efficient means of removing both dust and infection. Dry sweeping on the other hand tends to scatter dust.

23. Much can be done to prevent the spread of infection by due attention to the sanitation and ventilation of school-rooms and

cloak-rooms; and, so far as practicable, by preventing children having to sit in school in wet clothes or with wet feet. Overcrowding greatly favours the spread of infection, while adequate means of ventilation kept in constant effective use diminish it. The water supply of the school should be pure; and lavatories and closets should be kept in a satisfactory state.

(i.) *Exclusion of Individual Children.*

24. It may be laid down as a general principle that all children suffering from any dangerous infectious disease (*i.e.*, of a nature dangerous to some of the persons attacked by it, however mild in other cases) should be excluded from school until there is reason to believe that they have ceased to be in an infectious condition (see section 126 of the Public Health Act, 1875, also section 57 of the Public Health Acts Amendment Act, 1907; the latter section may be put in force in any district by Order of the Local Government Board).

Furthermore, as it is seldom possible to provide effectual separation of the sick from the healthy within the homes of children attending public elementary schools it is often necessary that all children of an infected household should be excluded from school; first, because otherwise such children, if unprotected by a previous attack, might attend school while suffering from the disease in a latent form, or at an unrecognised stage; and secondly, because it is known that infection of certain diseases may attach itself to, and be conveyed by, the throat secretions or the clothes of a person living in an infected dwelling, even though the person himself remain unaffected. The same considerations will sometimes make it desirable to prohibit the attendance at school of children who are known to have been in contact with a source of infection; of children of certain ages or classes; or of children from a particular street or hamlet.

25. The mode of procedure as regards recognised disease will depend on the natural history of the disease concerned. Patients themselves must not be allowed to attend school (a) until free from infection, and (b) until such disinfection of the house and of the patient's apparel as may be necessary has been secured. It is impossible to state exactly when personal infection ceases, and the Medical Officer of Health must not assume that at the end of the ordinary period of isolation danger to others has, without doubt, entirely ceased. It has ceased in the majority of instances; but in a minority of cases—for instance of scarlet fever and of diphtheria, whether treated at home or in an isolation hospital—the child remains infectious for a much more protracted period; and in practical administration this possibility must be borne in mind and allowed for.

26. The action with regard to healthy children in the same household as the patient will vary in different instances. The usual procedure is to allow their return to school at an interval after the removal or complete recovery of the patient and disinfection of the house a little longer than the maximum known period of incubation

of the disease in question. In view of the occurrence of slight overlooked cases and of "carrier" cases of infection, it is often advisable to prolong to a certain extent, as indicated hereafter, this period of exclusion from school.

27. Exclusion from school of the children of infected households most often fails as a means of preventing spread of infection because there are undiscovered or unrecognised cases or carriers of infection; and its failure points to the continued attendance at school of children having recently had attacks of the prevalent disease in a mild or unrecognised form or who without themselves being ill are carriers of infection. Such unrecognised cases are to be sought especially among (a) children attending school from the same street or vicinity as the recognised patients; (b) children in the same class; and especially (c) children who on reference to the school register are found to have returned to school after a short absence.

Although the provision will probably be more useful in private schools, attention may be drawn to section 58 of the Public Health Acts Amendment Act, 1907, which, in districts in which it has been put in force, enables lists of scholars in a school in which any scholar is suffering from an infectious disease to be obtained.

(ii.) *School Closure.*

28. School closure is occasionally necessary on account of infectious sickness in the teacher's family involving risk to the scholars. It is also occasionally necessary to close a school or division for one or two days in order that it may be disinfected and cleansed after children suffering from infectious disease have been in attendance, or to allow of the rectification of sanitary defects of a nature likely to contribute to outbreaks of disease.

29. But in the absence of such special and exceptional reasons for closure, it should not often be necessary to close the school in the interests of public health, if the power to exclude individual children be used to the best advantage. It is only when this less comprehensive but more discriminating and often sufficient action has failed, or owing to imperfect co-operation between the public health and the school authorities cannot be applied to the necessary extent, that the question of advising the Sanitary Authority to require the closure of the school in the interests of public health can arise.

30. It must be remembered that the closure of the school will deprive the Medical Officer of Health and the School Medical Officer of information respecting attacks in their early stage or illness of doubtful nature which would otherwise be obtainable and in any circumstance will interfere seriously with the education of the scholars. Closure, therefore, should be advised by the Medical Officer of Health only in circumstances involving imminent risk of an epidemic, and not then as a matter of routine nor unless there be a clear prospect of preventing the spread of infection such as cannot be expected from less comprehensive action.

31. School closure is more likely to aid in preventing the spread of disease in scattered rural districts than in towns, owing to the

fewer opportunities which exist in the former for intercourse between the children of different households elsewhere than at school.

It has also to be borne in mind that in such scattered rural districts means of isolation and of tracing doubtful cases are less effective. Hence school closure is likely to continue to be needed somewhat more frequently in such districts than in towns.

32. In places where there are several public elementary schools, if an outbreak of infectious disease be confined to the scholars of one particular school, it may be sufficient to close that school only, and even where school closure is deemed necessary in the case of a particular school it need not always extend to the whole school or department, but may on suitable occasions be limited to particular classes or departments.*

33. On the other hand where different schools have all appeared to aid in the spread of disease, though perhaps to an unequal extent, it may be considered advisable that all should be closed lest children in an infectious state who previously attended the schools that are closed, should be sent to others that might remain open. There is, however, less likelihood than heretofore that such attendance will be permitted, and a general closure on this ground will seldom be needed.

34. Playgrounds should not remain open when schools are closed, as they provide a meeting-place for the children whom it is the object of the closure to keep apart.

35. It may be laid down as a general principle that closure of a school or of a particular class is justified when the general evidence points to this school or class as the source of infection, and when cases of an infectious disease continue to occur in this class or school after every effort to discover the infecting cases has been made. The degree of application of this principle to special cases is discussed later.

36. But while the Medical Officer of Health in deciding whether to advise the Sanitary Authority to require the closure of a public elementary school† will be guided mainly by the consideration how

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* It is to be understood that the exclusion of all the children in a particular class in a department or school leaving the other children in the department or school free to attend school is not for the purposes of Article 45 (*b*) of the Code "closure" of the department or school, and that the provisions of that article do not apply in such cases.

† Sanitary Authorities have no general power in respect of Sunday schools, or other private schools, except in so far as these may contravene Section 91 (5), Section 126, or other provision of the Public Health Act, 1875, but it will often be expedient to invite the co-operation of managers of such schools in efforts for securing the public health. Experience shows that they are usually ready to defer to the representations of the authority responsible for the public health of the district.

If, however, the Local Government Board, on the application of the local authority, have declared Sections 57 and 58 of the Public Health Acts Amendment Act, 1907, to be in force in the district, the Medical Officer of Health will have power to require a child who is or has been suffering from infectious disease or has been exposed to infection to be excluded from school until the Medical Officer has certified that the child may attend school without undue risk of communicating such disease to others (Section 57). The power given to the Sanitary Authority by Section 58 to obtain a complete list of the names and addresses of day scholars in schools in which any scholar is suffering from infectious disease may be useful to the Medical Officer of Health in his investigation of the causes of outbreaks if he finds it necessary to extend his enquiry to private schools.

best to check the spread of disease, other considerations may require also to be taken into account by the School Medical Officer in deciding whether to advise or to approve action taken voluntarily under Article 45 (*b*) of the Code.

School attendance may be greatly lowered during the prevalence of an infectious disease, especially of measles and whooping-cough, and school closure may then be desired to avoid a considerable reduction in the average attendance. In such circumstances a large proportion of susceptible children have generally already contracted the disease or been exposed to infection, and the closure of the school commonly does little to prevent further spread of the disease. Closure by the Sanitary Authority under Article 57 of the Code is contemplated solely in the interests of public health, and apart from this consideration the Medical Officer of Health is not justified in advising closure to prevent financial loss to the Local Education Authority.

The question of closure, when that step is not clearly necessary to prevent the spread of disease, should therefore be left to the voluntary action of the Local Education Authority advised by the School Medical Officer, if he is not himself Medical Officer of Health. That officer, however, before advising or approving closure, should confer with the Medical Officer of Health on the public health aspects of the proposed closure.

PART III. RULES FOR ACTION IN RESPECT OF PARTICULAR DISEASES AND RULES OF OFFICIAL PROCEDURE.

37. The diseases for the prevention of which the exclusion of particular children from school or school closure may be required are principally those which spread by infection directly from person to person, such as measles, whooping-cough, scarlet fever, diphtheria, epidemic influenza, small-pox and rötheln (German measles). In rare cases the same measures may be necessary for enteric fever and diarrhœal diseases, when these spread through the agency of local conditions, such as infected school privies.

38. In the light of the general principles already set out the following procedure appears to be indicated in order to enable the Medical Officer of Health or the School Medical Officer to advise as to the minimum duration of exclusion of school children which can with reasonable safety be adopted in the several more common infectious diseases.* It should be noted that although certain recommendations are made as to duration of exclusion of patients and of "contacts" with them, these recommendations are subject to the proviso that *each case as it occurs requires and should receive individual consideration.*

Scarlet Fever.

A. Rules for Exclusion of Individuals.

(1.) *As regards each child attacked by the disease.*

39. (*a.*) *When treated in the Isolation Hospital* he is usually detained for about six weeks, and longer if any mucous discharges continue. After return home, in view of the occasional protracted infectiousness of patients with such discharges, and sometimes even of those without them, a notice should be sent to the teacher, and a notice should also be given to the parent to the effect that the patient should not attend school for two weeks.†

(*b.*) *When the patient has been treated at home* the same rules apply exactly, assuming that the patient and his rooms have been effectively disinfected after the illness has ended.

(2.) *As regards children living in infected houses.*

40. (*a.*) *When the patient has been removed to the Isolation Hospital* the teacher and the parents should be instructed to keep all children living in the same house away from school for two complete weeks from the day on which disinfection, subsequent to the removal of the patient, has taken place; and the parents of all children in the house, especially the

* In this connection the provisions of Article 53 (*b*), small print, of the Code for 1909 (quoted on page 5 of this Memorandum) must not be overlooked, and it must be remembered that, if the Local Education Authority so direct, the School Medical Officer will have full power to prolong the period for which any children have been excluded from school owing to sickness.

† A longer period, *e.g.*, of four weeks may not infrequently be necessary, not only in view of the health of the patient, but also if the occurrence of mucous discharges or other circumstances indicate that some measure of infectiousness may persist after cessation of home or hospital isolation.

parents of the patient, should be instructed to keep these children out of contact with other children for the same period.

This interval, although longer than the longest recognised incubation period for scarlet fever, is desirable in the case of children because of the occasional occurrence of anomalous or slight unrecognised attacks.

(*b.*) *When the patient is treated at home* no other children from the same house should attend school while the patient is infectious, nor for two weeks after the end of his period of isolation.

B. Rules for Closure of School.

41. If there is active co-operation between the school attendance officers and teachers and the Medical Officer of Health, school closure should only exceptionally be needed for scarlet fever. In school this disease usually spreads slowly from child to child, and not in the explosive manner characteristic of measles. Hence diligent search for slight cases and supervision of "contacts" should in most instances render school closure needless.

Diphtheria.

A. Advantage of Bacteriological Examination.

42. The examination of the throats of "contacts," whenever practicable, by bacteriological means, is a most important aid to precautionary measures against the spread of diphtheria. If a positive result is obtained in the case of children showing no evidence of diphtheria, the presence of some measure of infection must be assumed, though it will not be advisable to insist on the removal of such patients to an isolation hospital.

It is recognised that in many sanitary districts arrangements do not exist for such examinations; but it has been thought better to set forth the line of action commonly adopted in the best organised sanitary districts. Clinical examination of contacts and other children often throws valuable light on the origin of outbreaks of diphtheria. Particular attention should be paid to children who have been absent without known cause, or who show evidence of pallor, enlarged glands, or sore noses.

B. Rules for Exclusion of Individuals.

(1.) *As regards each child attacked by the disease.*

43. (*a.*) *When treated in the Isolation Hospital* the patient should, when practicable, be detained until three successive swabs taken on different days have given consistent negative results. These swabs should not be taken until at least 48 hours have elapsed since the last application of any disinfectant to the throat.

In view of the debility left by an attack of diphtheria, and the possible return of infectivity in the secretions of the nose or throat a notice should be sent to the teacher stating that the child should not return to school for four weeks after return home.*

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* Sometimes this period may be reduced to two weeks.

(*b.*) *When the patient has been treated at home* three successive negative swabs should, when practicable, be obtained as above; and after disinfection of the patient and his rooms and belongings, the same period of subsequent abstention from school attendance as above should be enjoined.

(2.) *As regards children living in infected houses.*

44. (*a.*) *When the patient has been removed to the Isolation Hospital* the teacher and the parent should be instructed to keep all children living in the same house away from school during the next two complete weeks, or even longer, unless these children have been cleared by negative result of bacteriological examination.

This interval is desirable owing to the frequent occurrence of slight cases of diphtheria and "carrier" cases.

(*b.*) *When the patient is treated at home* no other child from the same house should attend school while the patient is infectious, nor for four weeks afterwards.*

C. Rules for School Closure.

45. Although diphtheria, like scarlet fever, and unlike measles, usually spreads comparatively slowly in schools, it is apt to be very persistent, and not infrequently causes serious mortality especially among children under five years old. For these reasons, when cases of this disease occur in an infant school, there should be no hesitation in excluding children from attendance who are below the age of compulsory school attendance. This latter remark applies also for measles and whooping-cough.

Closure of other classes of the school should be resorted to only after clinical examination and, where practicable, bacteriological investigation for the detection of diphtheria bacilli in the pharyngeal or nasal mucus of children who have had slight sore throats, and of all other children who have been in contact with diphtheria patients has been made.

The need for protracted exclusion from school of recent diphtheria patients has already been emphasised. The systematic use of these measures should obviate the need for school closure for diphtheria.

Other Notifiable Diseases.

46. Children coming from houses in which have occurred cases of erysipelas or of enteric (typhoid) fever who are not themselves ill, need not as a rule be excluded from school. Nor is school closure required for either of these diseases, except in the rare instances in which enteric fever is due to some condition directly connected with the school.

Measles.

A. Characteristics of the Disease.

47. Certain facts need to be borne in mind in adopting preventive measures against measles. In towns the attack-rate is highest in

* Sometimes this period may be reduced to two weeks.

the third, fourth, and fifth years of life, while the death-rate caused by the disease is highest in the second year of life. After the age of five the death-rate caused by it is relatively very small. These facts clearly indicate the importance of postponing an attack of measles, and of adopting special measures to ensure increased safety for children under five.

Persons seldom contract measles a second time, and as in populous districts epidemics commonly recur every two or three years, most of the older children are protected against it by having passed through a previous attack. This rule may not apply to a country village, in which epidemics may be absent for a long series of years.

The early infectiousness of measles while the symptoms are only those of a common " cold " is another marked feature of this disease. It is not unlikely that a majority of the total cases are infected by patients in this early stage. The incubation period from infection to the commencement of catarrhal symptoms is 12 to 14 days with fair constancy.

Although measles is very infectious its infection does not appear to be long-lived, nor to be commonly conveyed by healthy persons. It thus differs from small-pox, scarlet fever, and diphtheria.

But though there is reasonable ground for the opinion that measles is not readily, if at all, conveyed to school by healthy children coming from infected households, it is desirable, particularly in view of the greater fatality of attacks of measles in children under seven years of age, to assume the possibility of such spread by intermediaries in regard to scholars attending the infant school, and to act accordingly as stated below.

B. Rules for the Exclusion of Individuals.

(1) *As regards children suffering from the disease.*

48. Children attacked by measles should be kept from school for four weeks.

(2) *As regards other children living in infected houses.*

49. In large towns, and in the smaller districts in which the majority of children over seven years of age who are attending public elementary schools have had measles, the practice is frequently adopted, when measles breaks out in a household, of excluding from school attendance only those children of the same household who attend the infant school, and those older children of the same household who have not had measles. These particular children of the same household should be excluded from school until 21 days from the date of onset of the illness of the last patient with measles in the house.

50. The above procedure can be recommended as the result of experience in large districts. It is a compromise which is obviously not a counsel of perfection, and may need future modification. Even under present conditions the procedure may need to be modified in accordance with the special circumstances of a particular district, with special reference to its past history as

to measles. The schedules for the medical inspection of school children, if kept carefully, will, in course of time, place at the disposal of the Medical Officer of Health and of the School Medical Officer the history of each child as to measles, as well as to other infectious diseases, and they will thus be able to decide, when a case of measles occurs in a particular class, which scholars in that class should, and which should not, be excluded from attendance at school.

C. Rules for School Closure.

51. School closure has probably more frequently taken place on account of epidemics of measles than for any other disease, but as the closure has been commonly deferred until a large proportion of the children are already absent, it has proved useless, in populous districts at least, for the purpose of preventing the spread of the disease.

If measles is introduced into a school, the first crop of secondary cases will occur about 12 days after the original case, and in 12 days more there will be a second crop comprising the majority of the unprotected children. Thus school closure, as ordinarily practised after the second crop of cases has occurred, fails to prevent an epidemic. In view of this experience a class closure of short duration after the occurrence of the first case of measles in the class may be substituted, the class being closed on the ninth day after the sickening of the first child, for a period of five days only. After this period, only those who have sickened need be excluded, along with those in the same households who have not had measles or who attend the infant school.

D. Warnings to Parents.

52. Warning notices to parents have been found to be valuable in preventing the spread of measles through the attendance at school of infecting children. These warnings should be sent out as soon as measles has appeared in a class the parents being warned to watch their children and to keep them from school if the slightest symptoms of a "cold" develop during the following three weeks.

The warning notice should also suggest that the parent should at once inform the teacher if these symptoms develop. The teacher can then report the case to the Medical Officer of Health and the School Medical Officer.

Whooping Cough.

53. The rules as to exclusion from or closure of school for this disease should be similar to those for measles, except that the infection of whooping cough probably lasts six weeks, and the children in the house who attend the infant school should therefore be excluded from school for this period—or as long as the cough continues.

Mumps and Chicken Pox.

54. Three weeks' isolation should be allowed for cases of mumps and the same period, or until all scabs have disappeared, for cases of chicken pox. Inquiry should be made as to the vaccination of supposed cases of chicken pox.

In chicken pox it is well to exclude from attendance at the infant school all children of the same family as the patient. In mumps the same practice, owing to the long incubation period of this disease, involves much greater interference with school work; and in view of this fact and of the absence of danger to life, the exclusion may be confined to the patient himself.

Pulmonary Tuberculosis.

55. Pulmonary tuberculosis in a recognisable form is seldom a large factor in school life. Where it is known to exist, either through the medical inspection of children or apart from this, the affected scholar should be excluded from school in his own interest, and in that of the school, if the patient has cough with or without expectoration.

General Notes as to Procedure.

56. In any case in which the Sanitary Authority require the closure of a public elementary school the notice should be addressed in writing to the Correspondent of the managers, and should state the grounds on which the closure is deemed necessary. It should be signed either by an authorised Officer of the Sanitary Authority in pursuance of their resolution, or by two members of the Sanitary Authority. A copy of the notice should be sent to the School Medical Officer.

All such notices must specify a definite time during which the school is to remain closed; this should be as short a period as can be regarded as sufficing on public health grounds, since a second notice may be given before the expiration of the first, if it should be found necessary to postpone the re-opening of a school.

57. Reports of Medical Officers of Health to Sanitary Authorities, advising the closure of a school or schools in any district, are to be treated as "special" reports within the meaning of the General Order of the Local Government Board of March 23rd, 1891, and copies of them are required by Article 18 (15) and (16) of that Order to be sent to that Board, and to the County Council. These reports should state the grounds upon which the Medical Officer of Health advocates the closure of the school or schools in preference to the exclusion of particular scholars.

58. Any directions or authorisations given by the School Medical Officer with respect to the question of excluding individual scholars on the ground that their exclusion is desirable to prevent the spread of disease must be embodied in a certificate signed by him; and a copy of every certificate must be furnished to the Local Education Authority (Article 53 (b) of the Code of 1908). The certificate must be produced if required to any Inspector or Officer of the Board of Education's Medical Department.

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